**WHAT IS CLAIMED IS:**

1. A method of selectively removing metal layers in a process for fabricating a semiconductor device, comprising:

removing the metal layers with a cleaning solution, the cleaning solution comprising an acid solution and an oxidation agent containing iodine.

2. The method of claim 1, wherein the metal layers comprise at least one of a titanium layer and a cobalt layer.

3. The method of claim 1, wherein the cleaning solution further includes water.

4. The method of claim 1, wherein the acid solution includes at least one of sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$.

5. The method of claim 3, wherein the cleaning solution includes water in an amount of about 30 wt% and less, and the oxidation agent containing iodine in an amount of about 0.003 to 10wt%.

6. The method of claim 5, wherein the titanium layer comprises at least one of titanium nitride and titanium.

7. A method of selectively removing a photoresist layer and organic materials in a fabricating process of semiconductor devices, comprising:

selectively removing the photoresist layer and organic materials using a cleaning solution, the cleaning solution including an acid solution and an oxidation agent containing iodine.

8. The method of claim 7, wherein the cleaning solution further comprises water.

9. The method of claim 7, wherein the acid solution includes at least one of sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$.

10. The method of claim 8, wherein the cleaning solution includes water in an amount of about 30 wt% and less, and the oxidation agent containing iodine in an amount of about 0.003 to 10wt%.

11. A method of selectively removing a metal layer in a process for forming a silicide layer comprising:

forming a silicon pattern over a substrate;

forming a metal layer over the substrate;

performing a silicide thermal treatment to form a metal silicide layer from silicidation reaction between the silicon and the metal layer;

cleaning a non-reacting metal layer that does not participate in the silicidation reaction using a cleaning solution,

wherein the cleaning solution includes an acid solution and an oxidation agent containing iodine.

12. The method of claim 11, wherein the metal layer includes at least one of cobalt, titanium, and nickel.

13. The method of claim 11, wherein the cleaning solution further includes water.

14. The method of claim 11, wherein the acid solution includes sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$.

15. The method of claim 14, wherein the cleaning solution includes water in an amount of about 30 wt% and less, and the oxidation containing iodine in an amount of about 0.003 to about 10wt%.

16. The method of claim 11, wherein the cleaning is performed at a temperature range of about room temperature to about 120°C.

17. The method of claim 11, further comprising a step of:

sequentially performing a first treatment using a mixture of $NH_4OH$ and $H_2O_2$ and a second treatment using HF or sequentially performing a first treatment using a mixture gas of $CF_4$ and $O_2$ and a second treatment using HF before forming the metal layer, so as to remove a natural oxide layer and to cure damage to the substrate.

18. The method of claim 11, wherein the silicide thermal treatment comprises:

performing a first thermal treatment;

performing a first cleaning that removes a non-reacting metal layer using the cleaning solution; and

performing a second thermal treatment.

19. The method of claim 18, wherein the cleaning solution includes water in an amount of about 30 wt% and less, and the oxidation containing iodine in an amount of about 0.003 to about 10wt%.

20. The method of claim 19, wherein the acid solution includes at least one of sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$.

21. The method of claim 19, wherein the first cleaning is performed at a temperature range of about room temperature to about 120°C.

22. The method of claim 11, wherein the substrate further includes a tungsten layer, and the cleaning solution does not remove the tungsten layer.

23. The method of claim 11, further comprising:

forming a titanium nitride layer over the metal layer, after forming the metal layer and before performing the silicide thermal treatment,

wherein the cleaning solution removes the titanium nitride layer.

24. The method of claim 23, wherein the silicide thermal treatment comprises;

performing a first thermal treatment;

performing a first cleaning that removes the titanium nitride layer and the non-reacting metal layer using the cleaning solution;

forming a second titanium nitride layer; and

performing a second thermal treatment,

wherein the cleaning solution removes the further formed titanium nitride layer and the non-reacting silicon.

25. A method of selectively removing a metal layer in a process for forming a silicide layer comprising:

forming a transistor comprising source/drain regions and a gate electrode over a silicon substrate;

forming a metal layer over the substrate;

forming a titanium nitride layer over the metal layer;

performing a thermal treatment to form a metal silicide layer from reaction between the silicon of the source/drain regions and the metal layer that directly contact the silicon ; and

performing a cleaning that removes the titanium nitride layer and a non-reacting metal layer that does not directly contact the silicon of the source/drain regions, using a cleaning solution,

wherein the cleaning solution includes an acid solution, an oxidation agent containing iodine and water.

26. The method of claim 25, wherein the step of forming the transistor comprises:

forming a gate insulation layer, a polysilicon layer, a tungsten layer and a capping insulation layer over the silicon substrate;

forming a photoresist pattern over the capping nitride layer;

forming the gate electrode by successively etching the layers formed thereunder using the photoresist pattern as a mask;

removing the photoresist pattern;

performing an ion implantation process to form the source/drain regions in the silicon substrate at both sides of the gate electrode ; and

forming nitride spacers on sidewalls of the gate electrode.

27. The method of claim 26, wherein the photoresist pattern is removed using the cleaning solution.

28. The method of claim 25, wherein the acid solution includes at least one of sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$, and the cleaning solution includes water in an amount of about 30 wt%

and less and an oxidation agent containing iodine in an amount of about 0.003-about 10wt%.

29. The method of claim 28, wherein the cleaning is performed at a temperature range of about room temperature to about 120°C.

30. The method of claim 29, wherein the metal layer includes at least one of cobalt, titanium, and nickel.

31. The method of claim 25, wherein the step of forming the transistor comprises:

sequentially forming a gate insulation layer and a polysilicon layer over the silicon substrate;

forming a photoresist pattern over the polysilicon layer;

forming the gate electrode by successively etching the layers formed thereunder using the photoresist pattern as an etch mask;

removing the photoresist pattern;

performing an ion implantation process to form the source/drain regions in the silicon substrate at both sides of the gate electrode ; and

forming nitride spacers on sidewalls of the gate electrode,

wherein when the metal silicide layer is formed at the source/drain regions by performing the silicide thermal treatment, a

metal silicide layer is formed on the polysilicon at an upper part of the gate electrode.

32. The method of claim 31, wherein the photoresist pattern is removed using the cleaning solution.

33. The method of claim 31, wherein the acid solution includes at least one of sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$, and the cleaning solution includes water in an amount of about 30 wt% and less and an oxidation agent containing iodine in an amount of about 0.003-about 10wt%.

34. The method of claim 33, wherein the cleaning is performed at a temperature range of about room temperature to about 120°C.

35. A cleaning solution that selectively removes a titanium nitride layer and a non-reacting metal layer in a silicidation process,

wherein the cleaning solution includes an acid solution, an oxidation agent containing iodine, and water.

36. The method of claim 35, wherein the acid solution includes at least one of sulfuric acid and phosphoric acid, and the oxidation agent containing iodine includes at least one selected from the group consisting of $KIO_3$, $NH_4IO_3$, $LiIO_3$, $CaIO_3$, $BaIO_3$, KI, and $NH_4I$.

37. The method of claim 35, wherein the cleaning solution includes water in an amount of about 30 wt% and less and an oxidation agent containing iodine in an amount of about 0.003-about 10wt%.

38. The method of claim 35, wherein the non-reacting metal layer includes at least one of cobalt, titanium, and nickel.